NASA

SATERN

System for Administration, Training, and Educational Resources for NASA

Training Evaluations

Classroom Guide

(Version 5.8 SP5)
April 2010

For SATERN Learning v 5.8 SP5

Last Modified 04/27/2010

From the NASA SATERN Program Office:

All SATERN administrator training materials must be used alongside the SATERN Rules and Process Guide for administrators. The Guide identifies areas where SATERN functionality cannot enforce the Agency-defined usage of the system at NASA and provide guidance to enable administrator compliance with Agency-defined methods and procedures.

Table of Contents

Lesson 1:
Overview for Training Evaluation

The goal of Lesson 1 is to establish an understanding of the concepts and terminology associated with training evaluations.

OBJECTIVES

Upon completion of this lesson, you will be able to:

➢ Identify all levels of evaluation and explain which evaluation tools are used in SATERN

➢ Understand evaluation terms and definitions

➢ Explain how evaluations are implemented at NASA

➢ Identify SATERN configurations needed to support evaluations

EVALUATING TRAINING RESULTS USING SATERN

SATERN's training evaluation feature can provide easy-to-use surveys with rapid reporting.

Assessing training effectiveness often uses a four-level model, similar to one developed by Donald Kirkpatrick. According to Kirkpatrick's model, evaluation begins with Level 1, and can move sequentially through the remaining levels (Figure 1).
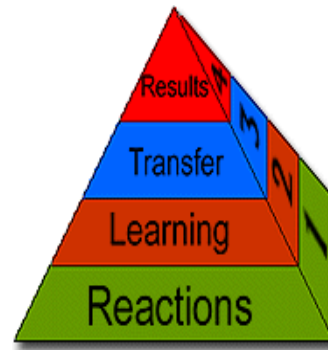
Figure 1. Kirkpatrick's Learning Evaluation Model

♦ **Level 1 – Learner reaction:** What learners thought and felt about the training, often referred to as a Smile Sheet *(item evaluation questionnaire in SATERN).*

The SATERN Standard Agency Level 1 Evaluation for instructor-led and online learning evaluates the learners' reaction to the training. It is a valid measurement tool that allows Centers to reliably gauge satisfaction, gain immediate feedback, and provide comparisons of courses/programs. Often only a Level 1 evaluation is necessary, depending on the type of training, level of investment, etc.

♦ **Level 2 – Learning:** Allows you to measure the learners' knowledge of the subject matter before and after they complete the item *(learning evaluations using pre and post tests in SATERN created with PQE).*

♦ **Level 3 – Behavior:** Extent of behavior and capability improvement and implementation/application *(collected by NASA via Metrics that Matter surveys, not tracked in SATERN).*

The SATERN Level 3, follow-up evaluation, evaluates learners' behavior after the training and assesses application of knowledge. MTM uses a five-level measurement model, the Kirkpatrick/Phillips Model, which goes beyond the SATERN Level 1 and 3 evaluations. The five levels include satisfaction,

learning effectiveness, job impact, business results, and return on investment.

♦ **Level 4 – Results:** The effects on the business or environment resulting from the learner's performance *(not available in SATERN)*

Why Evaluate Training?

There is a need for standard data collection, storage, and reporting processes for training within NASA, as well as the ability to analyze training data across NASA. It is important to efficiently and effectively collect training data in a practical, scalable, and repeatable manner. Managing the evaluation process can be a highly administrative effort.

How Level 1 Evaluations are Implemented at NASA

NASA uses SATERN to administer item evaluations/ questionnaire surveys to learners. A survey will be assigned automatically after successful completion of some of the instructor-led courses or online modules.

For this data collection, there are two templates in SATERN for these learner satisfaction surveys: One item evaluation survey will be attached to online courses, and another will collect feedback for instructor-led events.

NASA Business Rule

SATERN administrators should use the SATERN Level 1 Agency standard evaluation for applicable internal training (instructor-led and online learning). Administrators should not add, delete, or modify questions in these standard evaluations.

How Level 2 Evaluations are Implemented at NASA

For some courses, it may be important to assess what learners know about the topic before taking the class. This would enable NASA to measure the knowledge gained as a result of completing the item.

In these cases, a pre- and post-test can be added to the item to gather learning evaluation data. A Learning Evaluation report shows the training effectiveness of items based on the comparison of pre-test and post-test scores.

SATERN administrators can use their own discretion and decide whether to use Level 2 evaluations.

How Level 3 Evaluations are Implemented at NASA

For Level 3 evaluations, NASA will continue to use *Metrics that Matter* surveys. Administrators will not create or track follow-up evaluations in SATERN.

NASA Business Rule

SATERN Administrators should not use the Level 3 evaluation functionality in SATERN. If Level 3 evaluation is required, SATERN Administrators should contact the Agency MTM Administrator.

CONFIGURATION TO SUPPORT EVALUATIONS

The ability to support a training evaluation model within SATERN relies on some pre-configured entities.

Completion Status Triggers Survey Assignment

Each time a learner completes a learning event, a completion status is entered in the Learning History. NSSC Administrators can

create any number of completion status entries. NASA has about 50 different completion statuses for its various item types that can be used.

NASA has decided what completion status should trigger automatic assignment of a survey.

Note: *A survey must first be associated with an item for which the completion status is recorded.*

Figure 2 illustrates the configuration of a successful completion status in SATERN where a survey is automatically assigned.

Completion Status ID:	COURSE_COMP

Edit the Completion Status Reference

Description: Completed

Item Type: COURSE

☑ Credit Given

☑ Include learning events with this completion status for Item Evaluation: User Satisfaction Surveys Assignments

Figure 2. Completion Status that Automatically Assigns a Survey

NASA automatically assigns an evaluation survey whenever a learner successfully completes an online item or attends an instructor-led event and successfully completes the course.

If a learner received an incomplete completion status for an item because he/she did not attend the event, the learner will not be assigned an evaluation survey.

Rating Scale Used for Surveys

Rating scale questions can be used with surveys that give learners the ability to choose from a Likert scale. Using one rating scale throughout an item evaluation survey helps ensure results in reports and analysis.

NSSC administrators can create rating scales by navigating to
Performance > References > Competency Rating Scales.

Here is the evaluation survey rating scale used by NASA:

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

CONCLUSION

In this lesson, you learned the concepts and terminology
associated with the training evaluation model.

You should now be able to:

➢ Identify all levels of evaluation and explain which evaluation
tools you will use in SATERN

➢ Understand evaluation terms and definitions

➢ Explain how evaluations are implemented at NASA

➢ Identify SATERN configurations needed to support evaluations

LESSON CHECK

Use what you learned in this lesson to answer the following questions.

1. True or false:

   The final step for any training program is a summative evaluation in which you measure how effectively the training program accomplished its stated goals.

2. The first level of evaluation measures _____, and can be the most difficult to implement for a training program.
   a) Learning
   b) Reaction
   c) Behavior
   d) Results

Notes

Lesson 2:
Research Item Evaluation Surveys

The goal of Lesson 2 is to research and preview the two variations of NASA's standard item evaluation surveys. Then you will associate an item evaluation survey with items.

OBJECTIVES

Upon completion of this lesson, you will be able to:

➢ Identify the purpose of an item evaluation

➢ Identify possible question types for a item evaluation survey

➢ Research and preview item evaluation surveys used in SATERN

➢ Determine configuration options for item evaluation surveys

➢ Associate an item evaluation survey with an item

ITEM EVALUATIONS COLLECT DATA ON LEARNER SATISFACTION

An item evaluation is a questionnaire survey that assesses a learner's reaction to a training event. It is typically most effective if delivered immediately after the training event ends, when a learner's reaction is still fresh. This evaluation is sometimes referred to as a 'smile sheet' because in its simplest form, it measures how well learners liked the training.

Questions asked on a typical item evaluation survey cover the basics of a course and can be grouped according to focus area. For example, one set of questions might be related to the effectiveness of the instructor, and another set of questions might inquire about the usefulness of the materials.

Within SATERN, an item evaluation questionnaire survey can be structured with one or more pages, and one or more questions per page (Figure 3).
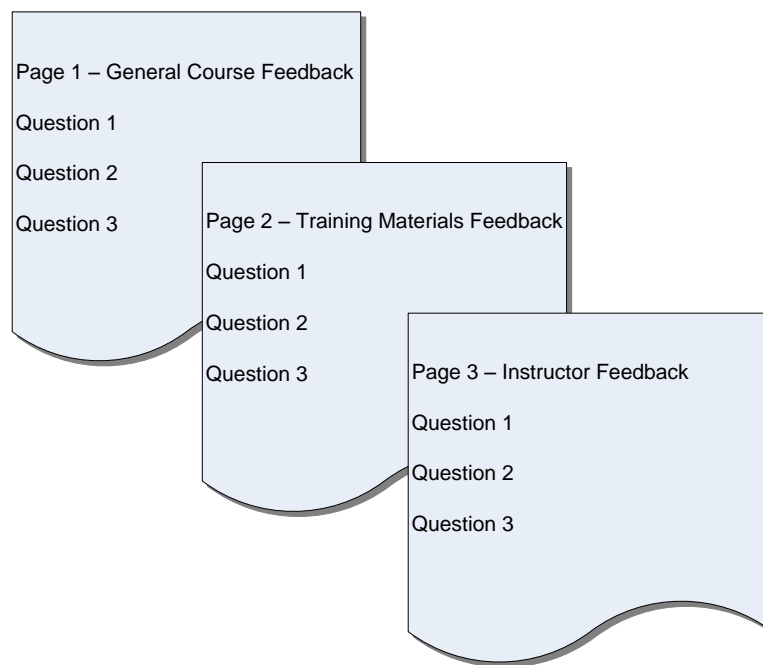
Page 1 – General Course Feedback

Question 1

Question 2

Question 3

Page 2 – Training Materials Feedback

Question 1

Question 2

Question 3

Page 3 – Instructor Feedback

Question 1

Question 2

Question 3

Figure 3. Evaluation Question Survey Structure

QUESTION TYPES FOR ITEM EVALUATIONS

There are four types of questions available in SATERN surveys:

♦ **Rating Scale:** Use this question type when you want to get quantitative results.

Note: Keeping the same rating scale per question throughout a survey is most helpful in providing a mean score across the entire survey.

- ♦ **One Choice:** Use this question type when you want the learner to choose one answer from a group.

- ♦ **Multiple Choice:** Use this question type when you want the learner to be able to choose multiple answers.

- ♦ **Open Ended:** Use this question type when you want the learner to enter an answer.

WORKING WITH NASA'S ITEM EVALUATIONS

You learned in the previous lesson that NASA will use one item evaluation for online items and one for instructor-led events. NSSC administrators will create and maintain these surveys.

In the next lab, you will research the survey layout and sections. You will also find out how you can preview the survey.

After researching the pre-built survey, you will associate the NASA survey with an item. Then you will learn about additional configuration options available to SATERN administrators.

In Lesson 3, you will record a learning event for several learners. This will automatically assign the survey to the learners.

You will log in as the learner and take the survey. That will provide enough data so that you can run reports and analyze the results.

Lab 1.   Research and Preview a Published SATERN Survey

Step
1.   Navigate to **Learning > Questionnaire Surveys**.
2.   Search for the questionnaire survey you would like to view. Notice that there are two questionnaire surveys: one for online courses and one for training programs (on-site and off-site).
3.   Click the **edit icon** ( ) to enter the questionnaire survey in edit mode.
4.   Select the **Questions** tab.
5.   The questions are divided into pages based upon topic. Click the **expand icon** ( ) to view all of the questions on a page.
6.   To view the questionnaire survey as the learner would see it, click the **Preview button** (Preview).
7.   Click **Close** to close preview of survey.

Note: Once a survey is published, the Questions tab will have two button options – **Preview** and **Create Draft**. Click **Preview** to view the published survey. NSSC administrators may click **Create Draft** to make minor edits to the survey content, such as misspellings that were overlooked during the draft version. These administrators should click **Publish** to re-publish the survey after making edits.

CONFIGURATION OPTIONS FOR LEVEL 1 SURVEYS

Learners can submit surveys anonymously. This would prevent an admin from identifying feedback with a specific learner.
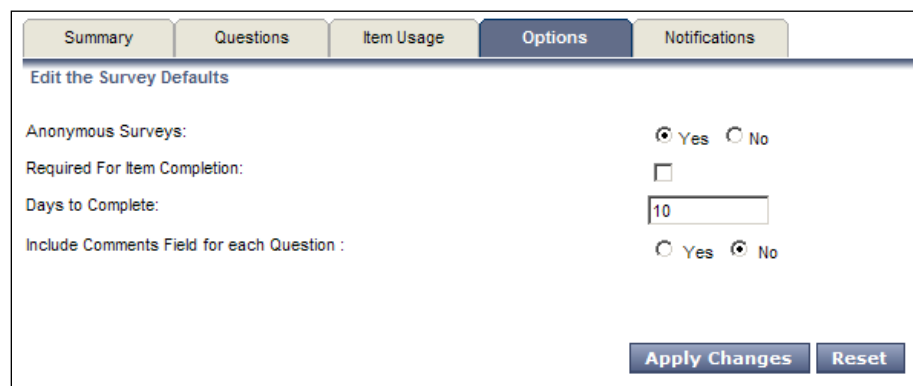
An item evaluation survey can be set up so that it is required for item completion. This would mean that the learner would not get credit for the event until the survey has been submitted.

NASA Business Rule

SATERN administrators should not set a Level 1 survey as required for item completion.

You can define the number of days that learners have to complete the survey. If the learners do not complete an optional survey in this time, the survey remains in the learners' record and the learners may remove it if they wish.

A comments section can be added after each question for additional feedback per question (Figure 4).

Figure 4. Configuration Options for Item Evaluation Survey

HOW TO ASSOCIATE A SURVEY WITH AN ITEM

There are two ways to associate an item with a survey:

♦ Using the **Item Usage** tab of the questionnaire survey record

♦ Using the **Evaluations** tab of the item record (Figure 5)

Figure 5. Items Associated with a Survey

From the questionnaire survey record, an admin can view the number of learners assigned to the survey, the number of completed surveys, the percentage of assigned surveys that have been completed, and a mean score for the survey results.

The mean score is the average of all the rating scale question responses across all completed surveys for that item. This average is only calculated when the rating scale is the same for all questions on the survey.

A SATERN admin can run a report from this screen to view item evaluation results. See the "Item Evaluation Reports" section for details.

It is only possible to associate one item evaluation survey per item. If a survey is already associated with an item, you will receive a warning message while attempting to associate another survey.

You are given the option to remove the previous survey with the current one, or cancel the association process (Figure 6).

Figure 6. Warning Message

Lab 2.   Method 1: Associate an Item with a Survey

Step

1.   From the questionnaire survey record, select the **Item Usage** tab.

2.   Click the **add one or more from list** link.

3.   Search for one or more items.

4.   Select one or more items from results list.

5.   Click **Add**.

Lab 3.   Method 2: Associate a Survey with an Item

Step

1.   Navigate to **Learning > Items**.

2.   Search for an item.

3.   Click the **edit icon** ( ) to enter the item in edit mode.

4.   Select the **Evaluations** tab.

5.   In the *Item Evaluation: User Satisfaction* section, click the **search icon** ( ) to search for and select a questionnaire survey.

6.   Click **Apply Changes**.

7.   Depending on how the survey was configured, the **Days to Complete** field may be auto-filled. If necessary, modify the field.

CONCLUSION

In this lesson, you researched and previewed NASA standard surveys to support evaluation of the learners' reactions to the training.

You should now be able to:

➢ Identify the purpose of an item evaluation

➢ Identify possible question types for a item evaluation survey

➢ Research and preview item evaluation surveys used in SATERN

➢ Determine configuration options for item evaluation surveys

➢ Associate an item evaluation survey with an item

LESSON CHECK

Use what you learned in this lesson to answer the following questions.

1. The most effective question type to use in order to obtain quantitative results is:
    a) Open Ended
    b) One Choice
    c) Multiple Responses
    d) Rating Scale

2. True or false:
    There is a one-to-one relationship between an item and a questionnaire survey.

Lesson 3:
Gather and Analyze Survey Results

The goal of Lesson 3 is to demonstrate how learners access and complete training evaluations. You will run an analysis report to collect results on an item and/or on an instructor.

OBJECTIVES

Upon completion of this lesson, you will be able to:

➤ Launch and complete assigned surveys from the learner side of SATERN

➤ Check learners' progress from a survey record

➤ Run reports from the survey record

➤ Run item evaluation reports from the reports tab

➤ Remove item evaluations from learner records

HOW LEARNERS COMPLETE SURVEYS

When a survey is assigned to a learner, an alert displays on their SATERN Home page. A learner is also sent a notification upon the assignment of a survey when a learning event is recorded.

A learner can access surveys directly from the Alerts Panel (Figure 7) or by navigating to **Learning > Surveys**.

Figure 7. Learner's Alerts

If while completing the survey an answer is missed, a warning message displays to inform the learner to complete the question.

Learners can save the survey and return later to continue editing. On the last page, a **Submit** button is displayed (Figure 8).

Figure 8. Last Page of Survey

Once a survey has been submitted, there is no record of a survey completion in a learner's Learning History.

Activity – Prepare a Plan to Assign and Take the Survey

Scenario

You want to complete a number of surveys on the learner side and to include a range of answers to simulate real life. This activity lets you see surveys from the learner's perspective. It also builds sufficient data in the system so that you can run meaningful reports.

Task A: Take the Instructor-Led Survey

Create a scheduled offering to deliver the course, and then register the appropriate employees. After they have finished the course, you will record learning event.

Steps:

1. Create a scheduled offering for the item used in the earlier lab _____.

2. Use instructor _____ for this scheduled offering. (This allows you to run a report on a specific instructor.)

3. Register 4 or 5 learners into the scheduled offering.

4. Change the date for the scheduled offering so that it is in the past.

5. Record a learning event for the scheduled offering and use the completion status _____.

6. SATERN automatically assigns the survey to all learners with this completion status – log in as a learner and take the survey.

Task B: Take the Online Survey

Here are steps to complete a sample set of surveys for an online course:

1. Log in as a learner and complete the online course that has a survey assigned.
   In this class, use _____.

2. After you have finished the course, you will automatically be assigned the survey.

3. Locate the survey and you complete it.

4. Log in as several more learners and repeat the process.

Lab 4.　　Launch and Complete an Assigned Survey

Step

1.　　Log in to SATERN as a learner.

2.　　Click **You have course surveys to complete** from the Alerts section (or navigate to **Learning > Surveys**).

3.　　Click **Launch Survey** from the Action menu.

4.　　Complete all pages of the survey.

5.　　Click **Submit**.

CHECK PROGRESS FROM THE SURVEY RECORD

The **Item Usage** tab (Figure 9) can be used to assign items to a survey and see survey statistics for those items.

Figure 9. Items Associated with a Survey

For each item that the survey is associated with, you can see:

♦ The number of learners assigned to the survey.

♦ The number of completed surveys.

♦ The percentage of assigned surveys that have been completed.

♦ The mean score. This is the average of all the rating scale question responses across all completed surveys for that item. The system calculates the mean score only if all questions use the same rating scale as specified in the Rating Scale field.

♦ Run the Item Evaluation report. The report will run and display results for *every* item using this survey. Therefore, you may want to run the report from the **Reports** menu where you can filter results based upon a particular item or many other filtering options.

ITEM EVALUATION REPORTS

The **Reports** menu contains several reports related to evaluations.

♦ The *Item Evaluation Report* shows the mean score (the average results for each survey, survey page, and survey question).

♦ The *Item Evaluation by Individual Response Report* shows each learner's responses to the survey questions (Figure 10).

Figure 10. Sample Item Evaluation by Individual Response Report

The *Item Evaluation by Instructor Report* shows the mean score (average rating) for each survey and survey page, grouped by instructor (Figure 11).
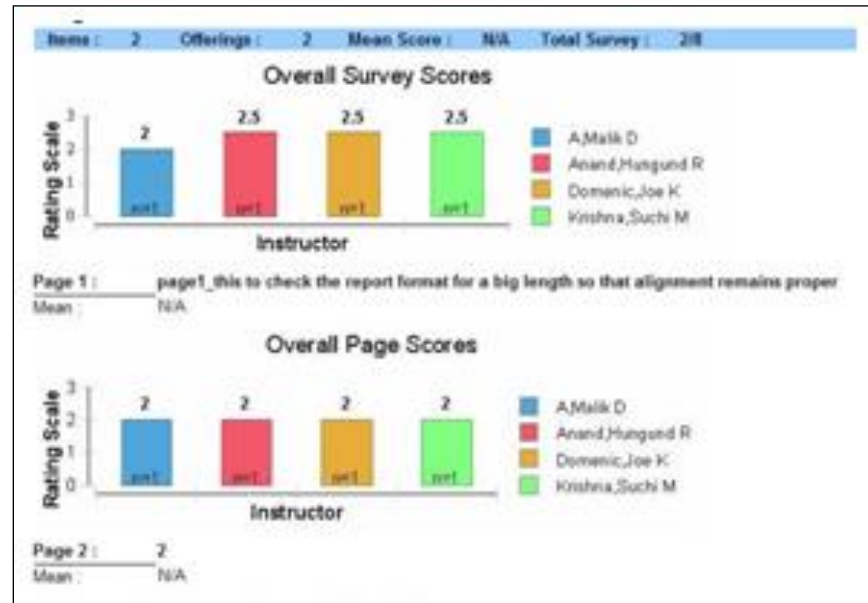

Figure 11. Sample Item Evaluation by Instructor Report

Lab 5.   Run an Item Evaluation Report

Step

1.   Navigate to **Reports**.

2.   Click the **Learning** checkbox in the Category section.

3.   Click the **Published** checkbox in the Publication Status section.

4.   Click the **Admin** checkbox in the Application section

5.   Type **evaluation** in the search box.

6.   Click **Submit**.

7.   Select the name of the report you want to run.

8.   Enter report criteria.

9.   Be sure to include

10.   Click **Run Report**.

REMOVE OUTDATED SURVEYS

The best way to capture accurate results is to have learners complete the survey soon after training. If a considerable amount of time has passed without survey completion, you may want to remove the survey from the learner record.

The next two labs discuss methods an admin can use to remove surveys from a learner's record.

Lab 6.　　Method 1: Remove Surveys via Learner Needs Management

Step

1.　　Navigate to **Learner Management > Tools > Learner Needs Management**.

2.　　Select **Remove Surveys (**Figure 12).

Figure 12. Learner Needs Management Tool

3.　　Click **Next**.

4.　　Click **add one or more from list**.

5.　　Search for and select learners with a survey you wish to remove.

6.　　Click **Next**.

7.　　Click **add one or more from list**.

8.　　Search for and select the item evaluation survey you would like to remove.

9.　　Click **Run Job Now**.

Lab 7.   Method 2: Remove Surveys Directly from the Learner Record

Step

1.   Navigate to **Learner Management > Learners**.

2.   Search for the learner with the survey you want to remove.

3.   Click the **edit icon** ( ) to enter the learner in edit mode.

4.   Select the **Surveys** tab.

5.   Locate the survey you would like to remove.

6.   Click the **Remove** checkbox.

7.   Click **Apply Changes**.

CONCLUSION

This lesson demonstrated how to access and complete surveys from the learner side, how to check the progress of learner completions of surveys, and the ways in which admins can remove surveys from a learner. This lesson also covered the ability of the administrator to access and run evaluation related reports.

You should now be able to:

➢ Launch and complete assigned surveys from the learner side of SATERN

➢ Check learners' progress from a survey record

➢ Run reports from the survey record

➢ Run item evaluation reports from the Reports tab

➢ Remove item evaluations from a learner record

LESSON CHECK

Use what you learned in this lesson to answer the following questions.

1. True or false:

    A completed survey remains in a learner's Learning History.

Lesson 4:
Evaluate Learning Using
Pre- and Post-Tests

The goal of Lesson 4 is to understand how SATERN administrators can associate a Level 2 learning evaluation with an item. This means setting up an exam that allows NASA to gather data and compare results on pre- and post-tests.

OBJECTIVES

Upon completion of this lesson, you will be able to:

➢ Explain the purpose of Level 2 evaluations

➢ Associate a pre-test and post-test as Level 2 evaluations

LEVEL 2 LEARNING EVALUATIONS

The purpose of a pre- and post-exam is to assess the learner population's knowledge of the content prior to the training, and then just after the training.

If the training program is effective, there will be an increase in knowledge when the two exam results are compared (Figure 13).
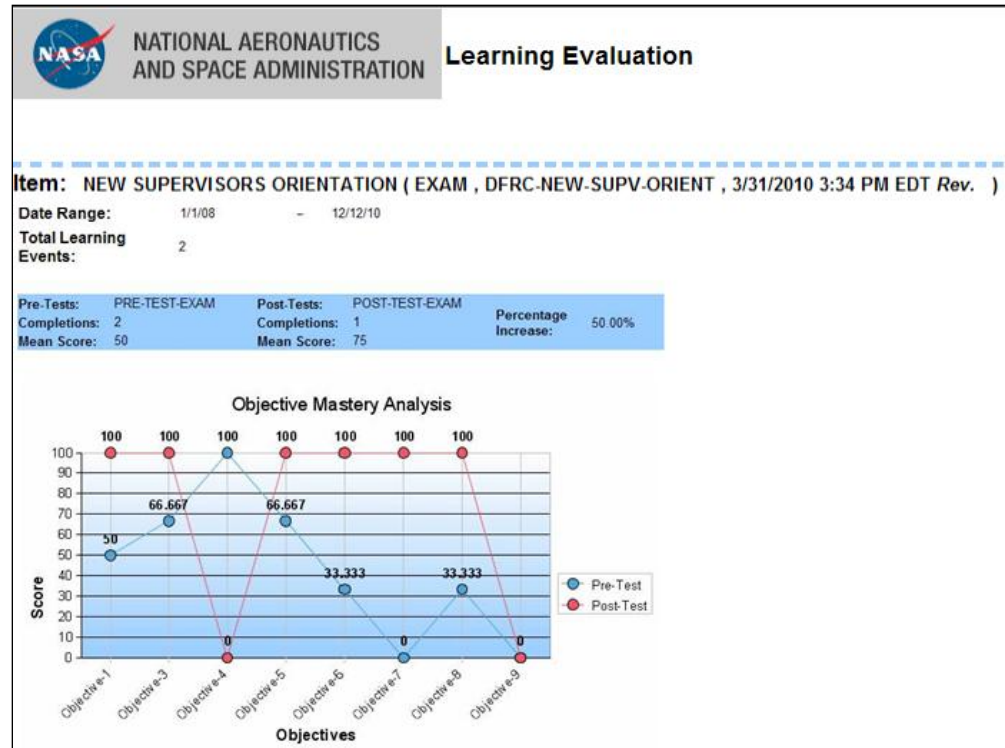
Figure 13. Sample Learning Evaluation Report

The next lab provides steps for associating a pre- and post-test with an item so results are available for reporting. See page 36 for steps to set up two independent exams in an item.

Lab 8.   Associate Pre- and Post-Exams with an Item

Step

1.   Navigate to **Learning > Items**.

2.   Search for and select an item record.

3.   Select the **Evaluations** tab.

4.   In the *Learning Evaluation: Mastery of Content* section, click the drop-down menu for **Pre-Test** and select the desired exam.

5.   Click the drop-down menu for **Post-Test** and select the desired exam.

6.   Click **Apply Changes**.

Scenario B: You want to use a pre-test and post-test for an item. You do not want to generate an evaluation report that compares the results of the pre-test with the results of the post-test.

Steps:

1. Navigate to **Learning > Items**.

2. Search for and select an item record.

3. Select the **Online Settings** tab.

4. Select an Online Completion Status and click **Apply Changes**.

5. Click the **edit** link next to the filing cabinet.

6. Add an object label as a description.

7. Select the **Exam/Survey** object type.

8. Click the **magnifying glass** and search for the pre-test.

9. Select the pre-test and configure relevant settings.

10. Click **Add**.

11. Repeat steps 6 -10 to add the post-test.

CONCLUSION

In this lesson, you created an association between previously created exams and an item. This association is used to measure learning based on comparison of scores on pre- and post-exams.

You should now be able to:

➢ Explain the purpose of Level 2 evaluations

➢ Associate a pre-test and post-test as Level 2 evaluations

LESSON CHECK

Use what you learned in this lesson to answer the following questions.

1. True or false:

   It is a best practice to associate objectives with questions for reporting and analysis.